CLAIMS

1. A method of treating obesity in a vertebrate animal comprising administering to said animal a non-toxic, gut motility-regulating amount of a trichothecene or derivative thereof.

2. The method of treating obesity according to claim 1, wherein the trichothecene or derivative thereof is selected from the group consisting of DON; nivalenol; trichothecolon; trichothecin; 3-acetyl DON; 7-acetyldeoxynivalenol; 3,15-diacetyldeoxynivalenol; 4-acetylnivalenol (fusarenon-X); 4,15-diacetylnivalenol; isopropylidine DON; isopropylidine-3-acetyl-DON; DON carbonate; 3-acetyl-DON carbonate; 3-acetyl-DON benzylidene acetal; and DON benzylidene acetal.

3. The method of treating obesity according to claim 2, wherein the trichothecene is DON.

4. The method of treating obesity according to claim 1, wherein the trichothecene is administered orally, parenterally, intravenously, intramuscularly, or intra-arterially.

5. The method of treating obesity according to claim 4, wherein the trichothecene is administered orally.

6. The method of treating obesity according to claim 1, wherein the vertebrate animal is selected from the group consisting of primates, swine, cattle, sheep, birds, horses, cats, dogs, and rodents.

7. The method of treating obesity according to claim 1, wherein the vertebrate animal is a human.

8. A method of stimulating fed pattern of gut motility in a vertebrate animal comprising administering to said animal a non-toxic, gut motility-regulating amount of a trichothecene or derivative thereof, a trichothecene analog, or a non-desensitizing agonist of the P_{2X1} receptor.

9. The method of claim 8, wherein the trichothecene or derivative thereof is selected from the group consisting of DON; nivalenol; trichothecolon; trichothecin; 3-acetyl DON; 7-acetyldeoxynivalenol; 3,15-diacetyldeoxynivalenol; 4-acetylnivalenol (fusarenon-X); 4,15-diacetylnivalenol; isopropylidine DON; isopropylidine-3-acetyl DON; DON carbonate; 3-acetyl-DON carbonate; 3-acetyl-DON benzylidene acetal; and DON benzylidene acetal.

10. The method of claim 8, wherein the trichothecene is DON.

11. The method of claim 8, wherein the trichothecene is administered orally, parenterally, intravenously, intramuscularly, or intra-arterially.

12. The method of claim 8, wherein the trichothecene is administered orally.

13. The method of claim 8, wherein the animal is selected from the group consisting of primates, swine, cattle, sheep, birds, horses, cats, dogs, and rodents.

14. The method of claim 8, wherein the vertebrate animal is a human.

15. The method of claim 8, wherein the non-desensitizing agonist of the P_{2X1} receptor is an analog of ATP.

16. A method of increasing weight in a vertebrate animal comprising administering to said animal an analog of ATP in an amount sufficient to inhibit fed pattern gut motor activity.

17. The method of claim 16, wherein the analog of ATP is a desensitizing agonist or an antagonist of the P_{2X1} purinoceptor.

18. The method of claim 17, wherein the analog of ATP is selected from the group consisting of α,β-methylene ATP and 2',3'-O-(2,4,6-trinitrophenyl)-ATP.

19. A method of preventing fed pattern of gut motility in a vertebrate animal comprising administering an analog of ATP.

20. The method of claim 19, wherein the analog of ATP is a desensitizing agonist or an antagonist of the P_{2X1} receptor.

21. The method of claim 20, wherein the analog of ATP is selected from the group consisting of α,β-methylene ATP and TNP-ATP.

22. A method of identifying a compound for treating obesity comprising determining whether the compound is capable of inducing fed pattern gut motor activity.

23. The method of identifying a compound for treating obesity according to claim 22, wherein the compound is tested for the ability to induce fed pattern gut motor activity using an *in vitro* gut organ bath assay, an *ex vivo* gut organ assay, or an *in vivo* assay for gut organ motor activity.

24. The method of claim 22, wherein the fed pattern gut motor activity induced by the compound is compared to the fed pattern gut motor activity induced by DON.

25. A pharmaceutical composition for inducing fed pattern gut motor activity comprising:
(a) a compound selected from the group consisting of nivalenol; 4-deoxynivalenol; trichothecolon; trichothecin; 3-acetyldeoxynivalenol; 7-acetyldeoxynivalenol; 3,15-diacetyldeoxynivalenol; 4-acetylnivalenol (fusarenon-X); 4,15-diacetylnivalenol; 3-hydroxy-12,13-epoxy-9-tricothecin-8-one-7,15 carbonate; 3-acetoxy-12,13-epoxy-9-tricothecin-8-one-7,15 carbonate; 3-acetoxy-7,15-benzylidene-12,13-epoxy-9-tricothecin-8-one; 3-hydroxy-7,15-benzylidene-12,13-epoxy-9-tricothecin-8-one; 3-hydroxy-7,15-isopropylidine-12,13-epoxy-9-tricothecin-8-one; 3-acetoxy-7,15-isopropylidine-12,13-epoxy-9-tricothecin-8-one; and combinations thereof, and
(b) a pharmaceutically acceptable carrier.

26. The compound 3-hydroxy-7,15-isopropylidine-12,13-epoxy-9-tricothecin-8-one.

27. The compound 3-acetoxy-7,15-isopropylidine-12,13-epoxy-9-tricothecin-8-one.

28. The compound 3-hydroxy-12,13-epoxy-9-tricothecin-8-one-7,15 carbonate.

29. The compound 3-acetoxy-12,13-epoxy-9-tricothecin-8-one-7,15 carbonate.

30. The compound 3-acetoxy-7,15-benzylidene-12,13-epoxy-9-tricothecin-8-one.

31. The compound 3-hydroxy-7,15-benzylidene-12,13-epoxy-9-tricothecin-8-one.